



Southern African lithospheric geometries deduced from electromagnetic imaging: the SAMTEX project

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The Southern African Magnetotelluric Experiment - SAMTEX - is a lithospheric-scale, electromagnetic project currently in progress being undertaken by a multi-institutional, international consortium of ten partners comprising academia, government and industry. The primary objective of SAMTEX is to determine the lithospheric geometries and internal structures of the major Archean cratons and their Proterozoic bounding belts in southern Africa with a view to elucidating Archean and Proterozoic tectonic processes of formation, deformation and destruction.

To date MT data have been acquired at over 500 sites on over 9000 line kilometres in a spatial area exceeding a million square kilometres, making this the largest survey of its kind ever conducted. Phase IV is taking place right now, extending coverage in principally Namibia and Botswana.

This paper will review the data acquired and present images and models of subsurface

structures. Inferences regarding temperature will be drawn from the electrical images. In particular, the relationship between lithospheric electrical parameters and diamondiferous kimberlite pipes will be highlighted.